

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
17 February 2005 (17.02.2005)

PCT

(10) International Publication Number
WO 2005/014773 A2

- (51) International Patent Classification⁷: **C12M 1/04**,
A01G 7/02
- (21) International Application Number:
PCT/GB2004/003352
- (22) International Filing Date: 3 August 2004 (03.08.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
0318411.6 6 August 2003 (06.08.2003) GB
- (71) Applicant (for all designated States except US): **THE UNIVERSITY OF HULL** [GB/GB]; Cottingham Road, Hull HU6 7RX (GB).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **ARMSTRONG, William** [GB/GB]; The University of Hull, Cottingham Road, Hull HU6 7RX (GB). **ARMSTRONG, Jean** [GB/GB]; The University of Hull, Cottingham Road, Hull HU6 7RX (GB).
- (74) Agent: **HARRISON GODDARD FOOTE**; 31 St. Saviourgate, York YO1 8NQ (GB).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— without international search report and to be republished upon receipt of that report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: **VESSEL**

(57) Abstract: We describe a vessel comprising a gas reservoir and at least one gas outlet, wherein said gas outlet comprises an integral gas permeable membrane and a culture system comprising said vessel.



WO 2005/014773 A2

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
17 February 2005 (17.02.2005)

PCT

(10) International Publication Number
WO 2005/014773 A3

(51) International Patent Classification⁷: **C12M 1/04**,
A01G 7/02

(21) International Application Number:
PCT/GB2004/003352

(22) International Filing Date: 3 August 2004 (03.08.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0318411.6 6 August 2003 (06.08.2003) GB

(71) Applicant (for all designated States except US): **THE UNIVERSITY OF HULL** [GB/GB]; Cottingham Road, Hull HU6 7RX (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ARMSTRONG, William** [GB/GB]; The University of Hull, Cottingham Road, Hull HU6 7RX (GB). **ARMSTRONG, Jean** [GB/GB]; The University of Hull, Cottingham Road, Hull HU6 7RX (GB).

(74) Agent: **HARRISON GODDARD FOOTE**; 31 St. Saviourgate, York YO1 8NQ (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

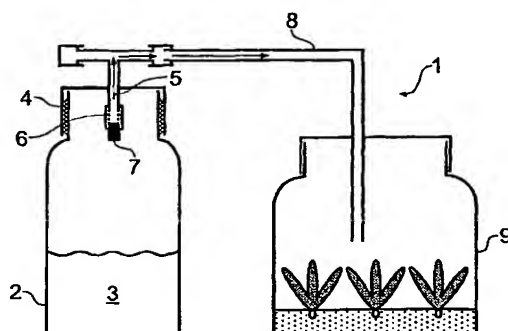
Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

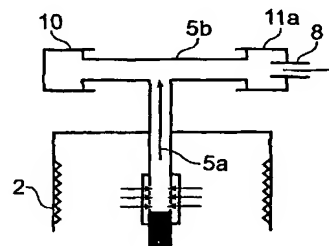
(88) Date of publication of the international search report:
26 May 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: VESSEL AND CULTURE SYSTEM COMPRISING THE VESSEL



a



b

(57) Abstract: We describe a vessel comprising a gas reservoir and at least one gas outlet, wherein said gas outlet comprises an integral gas permeable membrane and a culture system comprising said vessel.